IN THE CLAIMS:

Please AMEND claims 10, 13, 22, 23, and 30-33; and

Please ADD claim 38, as shown below.

1. (Previously Presented) A method, comprising:

establishing a protection path for a failed link between first and second nodes in a mesh network, wherein a transfer of information from the first node to the second node is disrupted by the failed link;

establishing an alternate path from the second node to the first node via a destination-to-source communication channel, wherein the destination-to-source communication channel is established through at least one alternate node beginning at the second node and ending at the first node;

determining whether a node of the at least one alternate node has available capacity to allow information from the failed link to be rerouted;

executing a switch function at the node of the at least one alternate node traversed by the destination-to-source communication channel to allow source-to-destination information traffic flow from the first node to the second node along the alternate path defined by the destination-to-source communication channel; and

switching the information traffic flow at the first node from the failed link to the alternate path when the destination-to-source communication channel is established at the first node.

2. (Previously Presented) The method as in Claim 1, further comprising:

transferring the information as optical signals, wherein the mesh network comprises an optical mesh network.

3. (Previously Presented) The method as in Claim 2, further comprising:

transmitting multiple optical signals each at a different wavelength on a single optical fiber, wherein the optical mesh network comprises an optical mesh network incorporating wavelength division multiplexing.

4. (Original) The method of Claim 3, wherein executing a switch function comprises optically switching the wavelengths of one or more of the optical signals of the failed link onto optical fibers establishing the alternate path.

5. (Original) The method of Claim 4, wherein optically switching one or more of the optical signals of the failed link comprises switching the one or more optical signals to alternate ports of an optical cross-connect.

6. (Original) The method of Claim 3, wherein executing a switch function comprises switching the optical signals of failed optical fibers onto alternate optical fibers to establish the alternate path.

7. (Original) The method of Claim 6, wherein switching one or more of the optical signals of the failed fibers onto alternate optical fibers comprises collectively switching the one or more optical signals associated with the optical fibers of the failed link to different ports of a fiber cross-connect.

8. (Original) The method of Claim 1, wherein establishing an alternate path from the second node to the first node comprises routing the destination-to-source communication channel along a predetermined path of the alternate nodes.

9. (Original) The method of Claim 1, wherein establishing an alternate path from the second node to the first node comprises routing the destination-to-source communication channel along a dynamically-generated path of the alternate nodes.

10. (Currently Amended) The method of Claim 9, wherein routing the destination-to-source communication channel along a dynamically-generated path comprises monitoring a node status associated with potential alternate nodes, and selecting the potential alternate node for inclusion into the dynamically-generated path

~~if~~when its respective node status exhibits a predefined capacity of available information bandwidth.

11. (Original) The method of Claim 10, wherein monitoring a node status comprises monitoring a node address table of which the node status is a field thereof.

12. (Original) The method of Claim 11, wherein monitoring a node address table comprises monitoring the node status of at least the next two hops of nodes.

13. (Currently Amended) The method of Claim 1, further comprising:

detecting the failed link at the second node.

14. (Original) The method of Claim 13, wherein detecting the failed link comprises monitoring for a loss of optical power at a corresponding port of the node, and detecting the failed link when the optical power reaches a predetermined threshold.

15. (Previously Presented) The method of Claim 1, further comprising:

initiating the transfer of information from the first node, wherein the first node is an information-originating source node.

16. (Previously Presented) The method of Claim 1, further comprising:

initiating the transfer of information from an information-originating source node;

providing the first node as an intermediate source node between the failed link and the information-originating source node.

17. (Previously Presented) The method of Claim 1, further comprising:

ultimately directing the transfer of information to the second node, which is a targeted destination node.

18. (Previously Presented) The method of Claim 1, further comprising:

ultimately directing the transfer of information to a targeted destination node; and

providing the second node as an intermediate source node between the failed link and the targeted destination node.

19. (Previously Presented) The method of Claim 1, further comprising:

transmitting a failure notification message from the second node to the first node via the destination-to-source communication channel by way of the alternate path.

20. (Previously Presented) The method of Claim 19, wherein switching the optical traffic flow at the first node comprises switching the information traffic flow to the alternate path when the first node receives the failure notification message, and allowing

the disrupted transfer of information to be switched to the alternate path when the first node is apprised of the failed link.

21. (Previously Presented) The method of Claim 1, further comprising:

dedicating one or more wavelengths of the destination-to-source communication channel to transmitting management information, including a link failure notification.

22. (Currently Amended) A network protection configuration, comprising:

an optical fiber network comprising

a plurality of optical network nodes each coupled to transmit and receive optical signals carried on distinct wavelengths on optical fibers of the optical fiber network, ~~the optical network further comprising~~ and

a source node attempting to transmit the optical signals via a failed transmission path and a destination node detecting the failed transmission path; and

a communication channel established from the destination node to the source node to transmit a path failure notification, wherein a route established by the destination-to-source communication channel traversing one or more of the optical network nodes defines an alternate transmission path, and wherein the network nodes defining the alternate transmission path are configured to be switched based on available capacity to allow information from the failed transmission path to be rerouted in response to the path

failure notification to facilitate source-to-destination transmission of the optical signals from the failed transmission path along the alternate path.

23. (Currently Amended) The network protection configuration as in Claim 22, wherein each of the optical network nodes further comprises memory to store an optical node address table, wherein the optical node address table is configured to maintains status information for surrounding optical network nodes being within at least two hops of the optical network node.

24. (Original) The network protection configuration as in Claim 23, wherein the status information comprises an optical node address for the surrounding optical network nodes.

25. (Original) The network protection configuration as in Claim 23, wherein the status information comprises node availability information for the surrounding optical network nodes.

26. (Original) The network protection configuration as in Claim 23, wherein the status information comprises node bandwidth capacity information for the surrounding optical network nodes.

27. (Original) The network protection configuration as in Claim 22, wherein each of the optical network nodes further comprises a fiber cross-connect circuit coupled to one or more of the optical fibers of the failed transmission path to switch the optical signals corresponding to a failed optical fiber to fiber cross-connect output ports to route the optical signals corresponding to the failed optical fiber to targeted optical fibers along the alternate path.

28. (Original) The network protection configuration as in Claim 27, wherein each of the optical network nodes further comprises an optical cross-connect circuit coupled to the fiber cross-connect circuit to switch at least one of the optical signals corresponding to the failed transmission to optical cross-connect output ports to route the at least one optical signal to targeted fibers in the fiber cross-connect for ultimate transmission along the alternate path.

29. (Previously Presented) The network protection configuration as in Claim 22, wherein the optical fiber network is configured to wavelength division multiplex multiple optical signals such that the multiple optical signals are each transmitted at a different wavelength on a single fiber.

30. (Currently Amended) The network protection configuration as in Claim 22, further comprising:

a monitoring ~~means~~ unit configured to ~~for~~ detect~~ing~~ the failed transmission path at the destination node.

31. (Currently Amended) The network protection configuration as in Claim 22, wherein each of the optical network nodes comprises a switching ~~means~~ unit configured to ~~for rerouting~~ reroute the optical signals corresponding to the failed transmission to optical fibers along the alternate path in response to the path failure notification.

32. (Currently Amended) A network protection configuration, comprising:

an optical fiber network comprising a plurality of optical network nodes each coupled to transmit and receive optical signals carried on distinct wavelengths on optical fibers of the optical fiber network,

wherein each of the plurality of optical network nodes comprisinges:

a fiber cross-connect circuit coupled to receive one or more of the optical fibers of the optical fiber network and to switch the optical signals on the optical fibers to particular output ports of the fiber cross-connect to route the optical signals on the optical fibers to targeted optical fibers;

an optical cross-connect circuit coupled to receive one or more of the optical signals and to switch the optical signals to particular output ports of the optical cross-connect to route the optical signals to targeted ones of the optical fibers;

destination-to-source communication channel established from a destination node detecting a failed transmission path to a source node to transmit a failed path notification,

wherein a route established by the destination-to-source communication channel traversing one or more of the optical network nodes defines an alternate transmission path based on available capacity to allow information from the failed transmission path to be rerouted, and

wherein the fiber cross-connect and optical cross-connect circuits of the network nodes defining the alternate transmission path are switched in response to the failed path notification to facilitate source-to-destination transmission of the optical signals from the failed transmission path along the alternate path.

33. (Currently Amended) A method, comprising:

establishing a protection path for a failed optical link between a source node and a destination node in an optical ~~WDM~~ wave division multiplexing mesh network, wherein a transfer of optical signals from the source node to the destination node is suspended by the failed optical link;

detecting the failed optical link at the destination node by recognizing the loss of optical power at destination node cross-connect ports;

transmitting a link failure signal via a communication channel from the destination node detecting the failed link to the source node through at least one alternate node;

determining whether a node of the at least one alternate node has available capacity to allow transmission of the suspended optical signals to be rerouted;

configuring a cross-connect switch at each of the alternate nodes receiving the link failure signal, comprising cross-connecting input ports to output ports of the cross-connect switch such that a source-to-destination protection path for transmission of the suspended optical signals is established as the link failure signal is transmitted from the destination node to the source node; and

switching the suspended optical signals from the failed optical link to the source-to-destination protection path upon receipt of the link failure signal at the source node, ~~whereby~~wherein the source-to-destination protection path is set up using a destination-to-source communication channel.

34. (Previously Presented) The method of claim 19, further comprising:

transmitting the failure notification message from the second node to the first node through the alternate node; and

directing, by the failure notification message, the one or more alternate nodes to execute the switch function, to establish the alternate path when the failure notification message reaches the source node.

35. (Previously Presented) The method of claim 33, further comprising:

transmitting the link failure signal from the destination node through the nodes; and

directing, by the link failure signal, the node to perform an appropriate switching function such that the source-to-destination protection path is set up by a time that the link failure signal reaches the source node.

36. (Previously Presented) A network node, comprising:

a port configured to receive information from a destination-to-source communication link;

a control circuit operably connected to the port and configured to a cross-connect section; and

the cross-connect section operably connected to the control circuit and configured to direct network traffic flow between a first node and a second node,

wherein the control circuit is configured, upon receipt of the information from a destination-to-source communication link, said information identifying that a protection path for a failed link between the first and the second node is to be established based on available capacity in the protection path, to cause the cross-connect section to execute a switch function to allow source-to-destination information traffic flow along a path defined by the information received from destination-to-source communication channel.

37. (Previously Presented) The network node of claim 36, wherein the node comprises an optical wavelength division multiplexing mesh network node.

38. (New) A network node, comprising:

reception means for receiving information from a destination-to-source communication link;

cross-connect means for directing network traffic flow between a first node and a second node,

control means, operably connected to the reception means and the cross-connect means, for, upon receipt of the information from a destination-to-source communication link, said information identifying that a protection path for a failed link between the first and the second node is to be established based on available capacity in the protection path, causing the cross-connect section to execute a switch function to allow source-to-destination information traffic flow along a path defined by the information received from destination-to-source communication channel.